From: Kelly Capuzzi
To: Abbot Stevenson; Craig Butler; Dave Schuetz; Tim Campbell
CC: Bruce Goff; Dan Imhoff; Jeromy_Applegate@fws.gov; Joann Montgomery; ...
Date: 04/21/08 12:57 PM
Subject: Re: Fwd: Ohio Valley Coal
Attachments: OVC Perkins Run Sediment Data Review Memo 08.docx; OVC Perkins Run Sediment Data Review Memo 08_1.pdf

Mylinda Shaskus did and ecological risk assessment on the sediment data that I collected from Perkins Run. She looked at both risks to human health and ecological risks. None of the numbers triggered risk to human health but quite a few were found to be a risk to ecological receptors. See attached memo for more details.

KC

Kelly Capuzzi
Ohio EPA, Div. of Surface Water
2195 Front St., Logan, OH 43138
(740) 380-5283

OhioEPA

State of Ohio Environmental Protection Agency

Interoffice Memorandum

To: Laura Fay, 401/Wetlands Section, Division of Surface Water
From: Mylynda Shaskus, Standards and Technical Support Section, Division of Surface Water
Date: April 21, 2008
Subject: Perkins Run Sediment Data from Post-Ohio Valley Coal Slurry 2/28/2008 Spill

This memo is my response to your email to me, dated April 18, 2008, in which you sent sediment data taken after the slurry release from Ohio Valley Coal on February 28, 2008, which you asked me to review. The results you sent were semi-volatile chemical results from sludge deposits in Perkins Run taken after the slurry release.

Risk to Human Health

I compared those results to the Ohio EPA Voluntary Action Program Residential Soil standards found in 3745-300-08 to determine if the deposits are a direct risk to human health. All of the chemical levels were below all of the VAP standards for human health, and therefore there is minimal risk expected from human exposure to the contaminated sediment.

Risk to Ecological Receptors

I compared the same results to the U.S. EPA Region 5 RCRA Ecological Screening levels, dated August 22, 2003. Those levels are intended to determine if sediment may present risks to aquatic organisms. That comparison is presented in Table 1 of this memo.

As you can see from the table, there were large exceedences of the ESLs in the sludge/sediment from Perkins Run. In numerous cases, the levels of contaminants were several orders of magnitude above the screening levels indicating the potential to adversely impact aquatic organisms.

There are also a number of chemicals that were detected in the sludge but which do not have ESLs, and therefore have an unknown effect on aquatic life.

Several of the chemicals that were detected at levels well above the ESLs are in the same class of chemicals, known as polycyclic aromatic hydrocarbons (PAHs). Most of these chemicals have the same toxic mechanism of action, and thus their effects can be additive, meaning that these exceedences may have an effect beyond that of each chemical taken individually.

Table 1. Levels of Semi-Volatile Organics in Perkins Run Sludge Compared to Ecological Screening Levels

Chemical	Units	OVC	RV ESL
2,4-Dimethylphenol	mg/kg	1.27	0.304
2-Methylnaphthalene	mg/kg	30	0.0202
Acenaphthene	mg/kg	0.9	0.00671
Benz[a]anthracene	mg/kg	0.78	0.108
Chrysene	mg/kg	0.83	0.166
Dibenzofuran	mg/kg	4.26	0.449
Ethylbenzene	mg/kg	9	0.175
Fluoranthene	mg/kg	0.7	0.423
Fluorene	mg/kg	2.19	0.0774
Naphthalene	mg/kg	25.1	0.176
Phenanthrene	mg/kg	6.93	0.204
p-Xylene	mg/kg	10	0.433
Pyrene	mg/kg	1.26	0.195
Toluene	mg/kg	9	1.22